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Research Paper

Surgical Exposure of Maxillary Central Incisors in 8 year old child -A Case Report

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Abstract
Background: *The impaction of deciduous teeth is a rare event. The appropriate health care of a patient may besignificantly impacted by delayed tooth eruption. Unerupted or clinical absence of maxillary central incisorscan have a significant impact on the dental as well as facial aesthetics of an individual; thus, promptmultidisciplinary management is indicated as unerupted incisors can lead to functional- and appearancerelateddistress. The missing upper incisors are considered unsightly, which could negatively impact anindividual's social well-being and self-esteem. Also, it hampers phonetics since it has an effect on theseteeth on the articulation of consonant speech sounds*
Case presentation: *A nine-year-old child was reported to the Department of Pediatric and Preventive Dentistry with a chiefcomplaint of the absence of teeth in the upper front region of the jaw for one to two years. The girl wasconcerned with aesthetic displeasure and social awkwardness, which restricted her everyday activities. Whilerecording, medical, family, and dental history presented with no significant findings. Surgical exposure was done according to protocol.*
Results: *Successful eruption were achieved within 10 months with good periodontaloutcomes.*
Conclusion: *Early diagnosis and interdisciplinary management ensure predictable results.*

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I. INTRODUCTION

The eruption of maxillary central incisors is a critical milestone in the mixed dentition phase, typically occurring between 7 and 8 years of age **[1]**. Any delay in eruption beyond this period often raises concerns for both clinicians and parents, as it may indicate underlying pathological or developmental disturbances **[2]**. Impacted or unerupted maxillary central incisors, although less common than impacted canines, present a significant clinical challenge due to their functional, esthetic, and psychological implications in growing children **[3]**.

The etiology of impacted maxillary central incisors is multifactorial and may include supernumerary teeth (particularly mesiodens), odontomas, trauma to primary predecessors, dilaceration of the root, space deficiency, or abnormal eruption path **[1,4]**. Among these, supernumerary teeth are considered the most frequent cause, interfering mechanically with the eruption pathway of permanent incisors **[2,5]**. Early diagnosis through clinical and radiographic evaluation is essential to prevent complications such as loss of space, midline deviation, cyst formation, or resorption of adjacent teeth **[6,7]**.

Management of unerupted maxillary incisors depends on the underlying cause, position of the tooth, and stage of root development **[5]**. Treatment approaches may range from removal of the obstruction followed by spontaneous eruption to surgical exposure combined with orthodontic traction **[3,8]**. Surgical exposure is

often indicated when spontaneous eruption is unlikely, especially in cases with complete root formation or unfavorable positioning **[8,9]**. This procedure facilitates guided eruption while preserving periodontal health and esthetics **[8]**.

Early intervention is particularly important in pediatric patients, as timely management can significantly improve treatment outcomes and reduce the need for complex orthodontic procedures **[7,10]**. The surgical exposure technique, when performed appropriately, has demonstrated favorable prognosis with satisfactory functional and esthetic results **[9]**.

This case report describes the surgical exposure of an impacted maxillary central incisor in an 8-year-old child, highlighting the clinical presentation, diagnostic considerations, surgical management, and outcome.

II. CASE REPORT

Patient Information

A 8 year old girl, accompanied by her mother, visited the Department of Pediatric and Preventive Dentistry, Jaipur Dental College. The primary concern of the patient and parent was the absence of teeth in the upper front region. It was noted that the child was shy, and the behavior was rated as definitely positive based on the Frankl behavior rating scale. The patient had no significant medical, family, or psychosocial background and had not undergone any previous dental treatments. The parents of the child were concerned about their child's esthetics.

Diagnostic Assessment

Pre operative photographs along with maxillary anterior x-ray was taken with respect to 11 21.

Treatment Procedure

After taking parentsconsent, make the child comfortably sit on the dental chair, Oral prophylaxis was performed prior to surgery. The surgical site was disinfected using povidone-iodine or chlorhexidine solution. Local anesthesia (2% lignocaine with adrenaline 1:100,000) was administered via labial infiltration. A **labial mucoperiostealflap** was planned. Depending on the position of the tooth, one of the following techniques was used, a **window excision technique** was performed:

- A small elliptical incision was made over the bulge of the impacted tooth
- Soft tissue covering the crown was excised
- The surgical site was irrigated with sterile saline
- Bleeding was controlled using gauze pressure
- The area was left open to allow eruption

Postoperative Care

- Analgesics (e.g., paracetamol/ibuprofen) were prescribed
- Antibiotics were given if indicated
- Chlorhexidine mouth rinse (0.12%) was advised
- Instructions included:
    - Maintain oral hygiene
    - Avoid trauma to surgical site
    - Soft diet for a few days

Follow-Up

- The patient was reviewed periodically after every 3 months
- Clinical and radiographic evaluation was done to assess eruption progress

Fig-1 Pre Operative

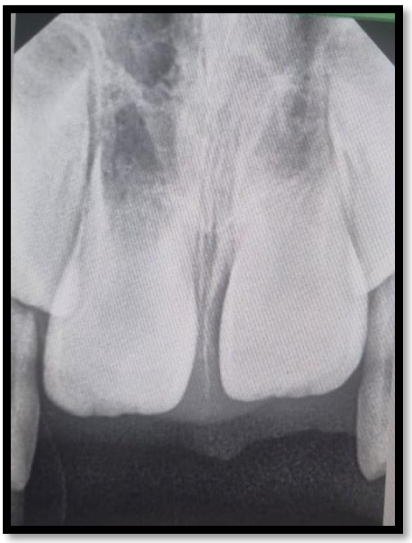

Fig-2 Pre Operative IOPA

Fig-3 Post Operative Occlusal view

Fig-4 Post Operative front view

Fig-5 Post Operative front view after 10 months

III. Discussion

Impaction of maxillary central incisors, although relatively uncommon compared to canine impactions, poses a significant clinical concern due to its impact on esthetics, phonetics, and psychosocial development in pediatric patients **[1,2]**. Early diagnosis and timely intervention are critical, particularly during the mixed dentition period, to prevent complications such as midline shift, space loss, and alveolar bone deficiency **[9]**.

The most common etiological factor associated with impacted maxillary central incisors is the presence of supernumerary teeth, especially mesiodens, which act as a mechanical barrier to eruption **[1,4]**. Other contributing factors include trauma to primary incisors leading to dilacerations ,odontomas, cystic lesions, and lack of space in the arch **[5,6]**. In the present case, early radiographic assessment played a pivotal role in identifying the exact position of the impacted tooth and any associated obstruction, consistent with recommendations by Sten Ericson and Johan Kurol, who emphasized the importance of radiographic localization techniques in managing ectopic eruptions **[6]**.

The timing of intervention significantly influences the prognosis of impacted incisors. Studies have shown that removal of the obstructing factor at an early stage, particularly before completion of root formation, may result in spontaneous eruption in a majority of cases **[8,7]**. However, when the tooth fails to erupt despite removal of obstruction or when root development is complete, surgical exposure combined with orthodontic traction becomes necessary **[8]**. In the present case, the patient's age (8 years) and stage of root development favored surgical exposure with a high probability of successful eruption.

Various surgical techniques have been described for the exposure of impacted incisors, including the window excision technique, apically positioned flap, and closed eruption technique. The choice of technique depends on the position of the impacted tooth, depth of impaction, and esthetic considerations **[7]**.

The **window excision technique**, as used in this case, is simple and effective when the tooth is superficially located. However, it may sometimes lead to gingival scarring or compromised periodontal outcomes if not carefully executed **[3]**. In contrast, the **closed eruption technique**, advocated by Vincent G Kokich, is considered superior in terms of periodontal health and gingival esthetics, as it allows the tooth to erupt through attached gingiva, mimicking natural eruption **[10]**.

Despite these differences, studies indicate that both techniques can yield successful outcomes when case selection is appropriate and surgical principles are meticulously followed **[8,10]**.

Following surgical exposure, spontaneous eruption is often anticipated, particularly in younger patients with incomplete root formation and favorable tooth angulation **[7]**. Moshe Ashkenazi et al. reported that a significant proportion of impacted incisors erupted spontaneously after removal of supernumerary teeth and surgical exposure **[7]**.

However, in cases where spontaneous eruption does not occur within a reasonable time frame (typically 6–12 months), orthodontic traction is indicated **[8]**. Light, controlled forces are essential to prevent damage to the periodontal ligament and ensure proper alignment within the arch.

Maintaining periodontal health is a critical aspect of managing impacted incisors. Improper surgical technique or excessive bone removal may result in gingival recession, loss of attached gingiva, or bone defects **[10]**. Therefore, conservative bone removal and preservation of soft tissue architecture are essential.

Esthetically, the successful alignment of the maxillary central incisor has a profound impact on the child's smile and self-esteem. Early treatment not only restores function but also prevents psychological distress associated with missing anterior teeth **[2]**.

The prognosis for surgically exposed maxillary central incisors is generally favorable when intervention is performed early and appropriate techniques are employed **[9,8]**. Factors influencing prognosis include:

- Patient's age
- Stage of root development

- Position and angulation of the tooth
- Presence of adequate space
- Absence of pathology

In the present case, early diagnosis, minimal surgical trauma, and favorable positioning contributed to a successful outcome.

References

[1]. Di Biase DD. Midline supernumeraries and eruption of the maxillary central incisor. *Dent Pract Dent Rec*. 1969;20(1):35–40.
[2]. Mason C, Azam N, Holt RD, Rule DC. A retrospective study of unerupted maxillary incisors associated with supernumerary teeth. *Br J Oral Maxillofac Surg*. 2000;38(1):62–65.
[3]. Kocadereli I, Turgut MD, Yetkiner E. Surgical-orthodontic treatment of impacted maxillary incisors: a clinical report. *J ClinPediatr Dent*. 2005;29(3):239–243.
[4]. Chaushu S, Chaushu G, Becker A. The role of digital volume tomography in the diagnosis of impacted teeth. *J Oral Maxillofac Surg*. 2004;62(11):1463–1467.
[5]. Becker A. *The Orthodontic Treatment of Impacted Teeth*. 3rd ed. London: Wiley-Blackwell; 2012.
[6]. Ericson S, Kurol J. Radiographic examination of ectopically erupting maxillary canines. *Am J OrthodDentofacialOrthop*. 1987;91(6):483–492.
[7]. Ashkenazi M, Greenberg BP, Chodik G, Rakocz M. Postoperative prognosis of unerupted maxillary incisors after removal of supernumerary teeth. *Pediatr Dent*. 2007;29(6):497–502.
[8]. Vermette ME, Kokich VG, Kennedy DB. Uncovering labially impacted teeth: apically positioned flap and closed-eruption techniques. *Angle Orthod*. 1995;65(1):23–32.
[9]. Witsenburg B, Boering G. Eruption of impacted permanent upper incisors after removal of supernumerary teeth. *Int J Oral Surg*. 1981;10(6):423–431.
[10]. Alqerban A, Jacobs R, Fieuws S, Willems G. Comparison of 2D and 3D imaging in assessing impacted maxillary teeth. *Eur J Orthod*. 2009;31(3):293–300